

Title (en)
METHODS OF FORMING SEMICONDUCTOR DEVICE HAVING A SELF-ALIGNED CONTACT STRUCTURE

Title (de)
HERSTELLUNGSVERFAHREN FÜR HALBLEITERBAUELEMENT MIT SELBSTJUSTIERTER KONTAKTSTRUKTUR

Title (fr)
PROCEDES DE FABRICATION D'UN DISPOSITIF SEMI-CONDUCTEUR COMPRENANT UNE STRUCTURE A CONTACTS AUTOALIGNES

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Abstract (en)
[origin: WO0143176A1] A self-aligned contact structure in a semiconductor device and methods for making such contact structure wherein the semiconductor device has a semiconductor substrate having active regions, an interlayer insulating layer covering the semiconductor substrate excluding at least a portion of each active region, at least two parallel interconnections on the interlayer insulating layer, at least one active region being relatively disposed between the at least two parallel interconnections, each interconnection having sidewalls, bottom and a width (x), a mask pattern having a top portion (z) and a bottom portion (y) formed on each interconnection, and a conductive layer pattern penetrating at least a portion of the interlayer insulating layer between the mask pattern and being electrically connected to at least one active region, wherein: $x \leq y$, $y \leq z$ and $x < z$. A second interlayer insulating layer having a relatively low dielectric constant is interposed between the conductive layer and the interconnections, which reduces the parasitic capacitance therebetween.

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